



AT-3637 JFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Paul Clinton Coffin et al.
Serial No.: 09/938,159
Filed: August 23, 2001
For: Removable Media Storage
Method and Device for a Data
Storage System

§ Art Unit: 3637
§
§
§ Examiner: Hanh Van Tran
§
§
§ Atty. Dkt. No.: 10012828-1
§ (HPC.0200US)
§

Mail Stop Appeal Brief-Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Dear Sir:

In response to the Notification, a Supplemental Appeal Brief is provided that includes a "Related Proceedings Appendix."

The remaining parts of the Supplemental Appeal Brief remain unchanged from the previously submitted Appeal Brief.

Respectfully submitted,

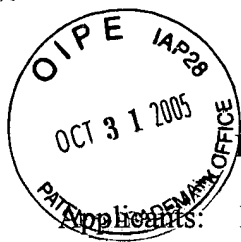
Date: 10-26-2005

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Date of Deposit: October 26, 2005

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Ginger Yount



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SUPPLEMENTAL APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 21, 22, 24-29, 35-42, and 54-62 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is the Hewlett-Packard Development Company.

II. RELATED APPEALS AND INTERFERENCES

None.

Date of Deposit: October 26, 2005

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Ginger Yount
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III. STATUS OF THE CLAIMS

Claims 21, 22, 24-29, 35-42, and 54-62 (set forth in the Appendix of Claims) have been finally rejected and are the subject of this appeal.

Claims 43-53 have been allowed, and are not the subject of this appeal. *See* 6/14/2005 Advisory Action. The allowed claims are set forth in a separate Appendix of Allowed Claims.

IV. STATUS OF AMENDMENTS

An Amendment Under 37 C.F.R. § 1.116 was submitted on May 25, 2005. The Amendment has been entered for purposes of appeal. *See* 6/14/2005 Advisory Action. The Amendment resulted in the allowance of claims 43-53.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 21 recites a data storage system (Figs. 1-3, 11, 38, 39:100) comprising:

a data storage system housing (Figs. 1-3, 11, 14:104) having an opening, and first and second elongate reference rails (Figs. 13, 14, 21:1312, 1316) located adjacent the opening (Specification, p. 43, line 1-p. 44, line 2);

a media storage device (Figs. 1, 2, 12-14, 25, 40:106; Figs. 27-30:2700) for storing a plurality of data media (Figs. 1, 12, 25, 27-29:102), the media storage device comprising a media storage device housing configured to receive the plurality of data media, the housing having a top, a bottom and opposing ends, the media storage device housing having first and second elongate alignment grooves (Figs. 13, 21:1320, 1322), each of which is adapted to slidably engage with a respective one of the first and second elongate reference rails such that the media storage device may be inserted into and removed from the data storage system housing by slidably engaging the elongate reference rails and the elongate alignment grooves and guiding the media storage device through the opening of the data storage system housing along a longitudinal axis of the media storage device housing, the opposing ends of the media storage device housing being located along the longitudinal axis, the data media being inserted into and removed from the media storage device housing along an axis transverse to the longitudinal axis (Specification, p. 33, line 17-p. 34, line 20; p. 43, line 1-p. 44, line 2);

a data exchange device for reading data from the data media (Figs. 2, 40:108; Specification, p. 9, lines 14-15); and

a media handling system for transferring data media from the media storage device to the data exchange device (Figs. 2, 11, 40-43; Specification, p. 9, lines 15-17; Specification, p. 12, line 1-p. 16, line 7).

Independent claim 36 recites a data storage system (Figs. 1-3, 11, 38, 39:100)

comprising:

a data storage system housing (Figs. 1-3, 11, 14:104) having an opening, and reference rails (Figs. 13, 14, 21:1312, 1316) located adjacent the opening (Specification, p. 43, line 1-p. 44, line 2); and

a media storage device (Figs. 1, 2, 12-14, 25, 40:106; Figs. 27-30:2700) for storing a plurality of data media (Figs. 1, 12, 25, 27-29:102), the media storage device comprising a media storage device housing configured to receive the plurality of data media, the housing having opposing ends, the media storage device housing having alignment grooves (Figs. 13, 21:1320, 1322), each of which is adapted to slidably engage with a respective one of the reference rails such that the media storage device may be inserted into and removed from the data storage system housing by slidably engaging the reference rails and the alignment grooves and guiding the media storage device through the opening of the data storage system housing along a longitudinal axis of the media storage device housing, the opposing ends of the media storage device housing being located along the longitudinal axis, the data media being inserted into and removed from the media storage device housing along an axis transverse to the longitudinal axis (Specification, p. 33, line 17-p. 34, line 20; p. 43, line 1-p. 44, line 2).

Independent claim 60 recites a data storage system (Figs. 1-3, 11, 38, 39:100) comprising:

a data storage system housing (Figs. 1-3, 11, 14:104) having an opening and reference structures (Figs. 13, 14, 21:1312, 1316);

a media storage device (Figs. 1, 2, 12-14, 25, 40:106; Figs. 27-30:2700) for storing a plurality of data media devices (Figs. 1, 12, 25, 27-29:102), the media storage device having a housing with alignment structures (Figs. 13, 21: 1320, 1322) to slidably engage the respective reference structures to enable slidable movement of the media storage device through the opening of the data storage system housing (Specification, p. 33, line 17-p. 34, line 20; p. 43, line 1-p. 44, line 2); and

a moveable media exchange device (Figs. 1, 2, 12-14, 22:114; Figs. 24, 25:2400) to receive the media storage device, the media exchange device moveable between a retracted position and an extended position, wherein the media storage device is positioned inside the data storage system housing when the media exchange device is in the retracted position, and wherein the media storage device protrudes from the data storage system housing when the media exchange device is in the extended position (Specification, p. 11, lines 6-7; p. 34, line 14-p. 36, line 7; p. 48, line 12-p. 49, line 4); and

guide structures to moveably guide the media exchange device between the retracted and extended positions (Figs. 13-20, 22, 24, 31:1400, 1308, 1332; Specification, p. 36, line 8-p. 40, line 4).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- A. Claims 21, 22, 24-29, 35-42, and 54-59 Were Rejected Under 35 U.S.C. § 103 Over U.S. Patent No. 6,116,063 (Foslien) in View of U.S. Patent No. 6,480,391 (Monson).**
- B. Claims 60-62 Were Rejected Under 35 U.S.C. § 103 Over Foslien in view of U.S. Patent No. 5,596,556 (Luffel) and U.S. Patent No. 6,160,786 (Coffin).**

VII. ARGUMENT

- A. Claims 21, 22, 24-29, 35-42, and 54-59 Were Rejected Under 35 U.S.C. § 103 Over U.S. Patent No. 6,116,063 (Foslien) in View of U.S. Patent No. 6,480,391 (Monson).**

- 1. Claims 21, 22, 24-26, 28, 35-39, 41, 54, 57 and 58.**

Independent claims 21 and 36 were rejected as being obvious over Foslien and Monson.

Claim 36 recites a data storage system comprising a data storage system housing having an

opening and reference rails located adjacent the opening, and a media storage device *for storing a plurality of data media*. The media storage device includes a media storage device housing having *alignment grooves*, each of which is adapted to slidably engage with a respective one of the *reference rails* such that the media storage device may be inserted into and removed from the data storage system housing by slidably engaging the reference rails and the alignment grooves and guiding the media storage device through the opening of the data storage system housing along a longitudinal axis of the media storage device housing.

Appellant respectfully submits that a *prima facie* case of obviousness has not been established with respect to the rejected claims for at least the two following reasons: (1) there existed no motivation or suggestion to combine Foslien and Monson to achieve the claimed invention; and (2) even if they can be combined, the hypothetical combination of Foslien and Monson does not teach or suggest all elements of the claims. *See* M.P.E.P. § 2143 (8th ed., Rev. 2), at 2100-129.

Figs. 2 and 3 of Foslien depict a data storage system that has a drawer 54 with slots 56, 58 for receiving data storage media 60, 62. Foslien, 4:60-5:6. Although an unlabelled structure is depicted underneath the drawer 54 to enable movement of the drawer 54 into and out of the housing 30 (see Fig. 2 of Foslien), there is no teaching of the drawer 54 having alignment grooves for engaging reference rails of the housing 30, a point that was conceded by the Examiner. 2/25/2005 Office Action at 3.

However, the Examiner relied upon Monson as teaching features missing from Foslien. Specifically, the Examiner referred to structures in a DASD tray 95 depicted in Figs. 3 and 4 of Monson. As depicted in Figs. 3 and 4 of Monson, DASD trays 95 are provided along respective

guide rails 100 of a cage 10. *See* Monson, 6:60-64. The DASD trays 95 have springs 135 for engaging roof and floor members of the cage. Monson, 7:15-19.

The Examiner's reliance on Monson as teaching a claimed feature that is missing from Foslien is misplaced, as Monson does not suggest the modification of Foslien proposed by the Examiner. Note that the DASD tray 95 of Monson is an individual storage device, not a media storage device for receiving *a plurality of data media*, as expressly recited in claim 36. The ordinary definition of the term "direct access storage device" or "DASD" is "another name for disk drive in the world of mainframes." *See* Webopedia (attached in Evidence Appendix), definition for "DASD." In fact, as Monson expressly states, DASDs are "individually disposed within a so-called 'sled' or tray." Monson, 1:14-17. Thus, what Monson would have suggested to a person of ordinary skill is that springs 135 can be provided on *individual* DASD trays. Note that claim 36 recites the provision of alignment grooves on the housing of a media storage device that stores a *plurality* of data media. In contrast, Monson teaches the use of springs 135 on an individual DASD tray 95 for alignment of the DASD tray. Monson, 7:18-21. Thus, there existed no suggestion in Monson of providing any type of alignment structure on a media storage device used for storing *a plurality* of media.

The springs 135 (on the DASD trays) and guide rails 100 (of a cage) of Monson are intended for use to align multiple DASD trays in the cage. This concern of aligning multiple DASD trays in a cage is simply not applicable to the drawer 54 of Foslien. Thus, clearly, no motivation or suggestion is provided by Monson to modify the structure of the drawer 54 of Foslien to achieve the claimed invention. *See, In re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992) (reversing an obviousness rejection where the rejection was based on a combination of references where no suggestion or motivation existed for the combination).

The Examiner cited *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988), as purportedly supporting the obviousness rejection. 2/25/2005 Office Action at 6. However, *In re Fine* expressly holds that teachings of references can be combined *only* if there is some suggestion or incentive to do so. *In re Fine*, 837 F.2d at 1075. Where such suggestion does not exist, *In re Fine* held that the obviousness rejection would be based upon impermissible hindsight. *Id.* As the court in *In re Fine* emphasized, “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” *Id.*

The Examiner’s attempt at applying teachings with respect to single storage devices (in Monson) to the drawer disclosed by Foslien, where no motivation or suggestion existed for such combination, is based entirely on impermissible hindsight using the present invention as the template to piece together un-related elements of the prior art. For at least the foregoing reasons, Appellant respectfully submits that the Examiner has failed to establish a *prima facie* case of obviousness.

Moreover, even if Foslien and Monson can be properly combined, the hypothetical combination of Foslien and Monson does not teach or suggest the alignment grooves provided on a media storage device for storing a plurality of data media as recited in claim 36. As conceded by the Examiner, the drawer 54 of Foslien does not have alignment grooves for engaging reference rails of the housing 30. As discussed above, the DASD tray 95 of Monson is not a media storage device for storing a plurality of data media. In other words, neither Foslien nor Monson teaches or suggests a media storage device for storing a plurality of data media, where such media storage device has alignment grooves adapted to slidably engage with respective reference rails.

The Examiner argued that the claim language “fails to provide adequate structural limitations in order to distinguish applicant’s invention from Foslien in view of Monson,” referring to the distinction between the “individual storage device” of Monson and “media storage device” of claim 36. 2/25/2005 Office Action at 7. Appellant respectfully submits that claim 36 unambiguously and explicitly claims a media storage device for storing a *plurality* of data media, and that such media storage device (for storing the plurality of data media) has a housing with alignment grooves for engaging respective reference rails. Clearly, neither Foslien nor Monson discloses or suggests such a media storage device. Therefore, the hypothetical combination of Foslien and Monson clearly fails to teach or suggest the claimed invention.

For the foregoing reasons, it is respectfully submitted that a *prima facie* case of obviousness has not been established with respect to claim 36.

Independent claim 21 is similarly allowable over the asserted combination of Foslien and Monson.

For the foregoing reasons, the final rejection of the above claims should be reversed.

2. Claims 27, 29, 40, and 42.

Claims 27 and 29 (which depend from claim 21) and claims 40 and 42 (which depend from claim 36) are allowable for at least the same reasons as corresponding independent claims 21 and 36.

Moreover, claim 27 further recites a spring mechanism that is operationally attached to the top of the media storage device housing, and a finger attached to the spring mechanism, where the spring mechanism and finger are configured to engage the data media. Without providing any specific citations, the Examiner stated that Foslien teaches “a spring mechanism of a metallic strip configured to engage the data media when received within the slots”

2/25/2005 Office Action at 3. A review of Foslien indicates that there is no disclosure of such a spring mechanism with a finger attached to the spring mechanism, where the spring mechanism is attached to the top of the media storage device housing. Therefore, because a feature asserted by the Examiner to be taught by Foslien is in fact not taught or suggested by Foslien, it is respectfully submitted that the hypothetical combination of Foslien and Monson fails to teach or suggest the invention of claim 27 for this additional reason.

Claims 29, 40, and 42 are allowable for similar reasons.

In view of the foregoing, reversal of the final rejection of the above claims is respectfully requested.

3. Claims 55 and 56.

Claims 55 and 56 depend from claim 36, and thus are allowable for at least the same reasons as claim 36.

Moreover, claim 55 further recites a media exchange device for moving the media storage device, a first guide structure attached to the media exchange device, a second guide structure attached to the data storage system housing, where the second guide structure interacts with the first guide structure to move the media exchange device, and where the reference rails and alignment grooves are *separate from the guide structures*.

The Examiner has failed to explain how Foslien and/or Monson teaches first and second guide structures that are separate from the reference rails and alignment grooves, as recited in claim 55. Note that the media exchange device recited in claim 55 is for moving the media storage device, which is for storing a plurality of data media. If the drawer 54 of Foslien is considered to be the media storage device (as indicated by the Examiner), then there is nothing in

Foslien that would teach the media exchange device for moving the media storage device, as recited in claim 55. Monson does not teach or suggest this feature that is missing from Foslien.

For this additional reason, the hypothetical combination of Foslien and Monson fails to teach or suggest the invention of claim 55. Reversal of the final rejection of the above claims is respectfully requested.

4. Claim 59.

Claim 59, which depends from claim 36, is allowable for at least the same reasons as claim 36.

Moreover, claim 59 further recites a second media storage device for storing a plurality of data media, where the second media storage device has alignment grooves. Claim 59 further recites that the alignment grooves of the second media storage device are engageable by *the same reference rails*. Again, with respect to claim 59, the Examiner has failed to explain how either Foslien or Monson teaches alignment grooves of *two* media storage devices being engageable by the *same* reference rails. In fact, there is no such structure in either Foslien or Monson.

This is a further reason that the hypothetical combination of Foslien and Monson fails to teach or suggest the invention of claim 59. Reversal of the final rejection of claim 59 is therefore respectfully requested.

B. Claims 60-62 Were Rejected Under 35 U.S.C. § 103 Over Foslien in View of U.S. Patent No. 5,596,556 (Luffel) and U.S. Patent No. 6,160,786 (Coffin).

1. Claims 60-62.

Independent claim 60, rejected as obvious over Foslien, Luffel, and Coffin, recites a data storage system including a data storage system housing having an opening and reference

structures, and a media storage device for storing a plurality of data media devices. The media storage device has a housing with alignment structures to slidably engage the respective reference structures to enable slidable movement of the media storage device through the opening of the data storage system housing. Moreover, the data storage system has a moveable media exchange device to receive the media storage device, where the media exchange device is moveable between a retracted position and an extended position. The media storage device is positioned inside the data storage system housing when the media exchange device is in the retracted position, and the media storage device protrudes from the data storage system housing when the media exchange device is in the extended position. In addition, the data storage system further includes guide structures to moveably guide the media exchange device between the retracted and extended positions.

The Examiner conceded that Foslien does not disclose a moveable media exchange device to receive the media storage device, as recited in claim 60. 2/25/2005 Office Action at 5. Note that the media exchange device of claim 60 is moveable between a retracted position (where media exchange device is positioned inside data storage system housing) and an extended position (where media exchange device protrudes from the data storage system).

The Examiner further stated that such a moveable media exchange device was “well known,” without citing to specific support for the “well known” statement. *Id.* Then the Examiner cited Luffel and Coffin as teaching the recited media exchange device, without citing to any specific passage of Luffel or Coffin. *Id.* Such an obviousness rejection is defective, as insufficient support has been provided by the Examiner for the rejection. Therefore, a *prima facie* case of obviousness has not been established.

Moreover, both Luffel and Coffin refer to use of a cartridge engaging assembly (18 in Fig. 1 of Luffel, and 10 in Fig. 1 of Coffin). It is unclear whether the Examiner is equating the moveable media exchange device of claim 60 with such cartridge engaging assemblies. Note that the cartridge engaging assembly of each of Luffel and Coffin moves entirely within the data storage system. Therefore, such cartridge engaging assemblies do not have an extended position where the cartridge engaging assemblies would protrude from the data storage system housing.

Moreover, the cartridge engaging assembly 18 of Luffel retrieves *one* of the cartridges 14 (Luffel, 4:39-41), and the cartridge engaging assembly 10 of Coffin engages *a* data cartridge 14 (Coffin, 4:16-19). Thus, the cartridge engaging assembly of Luffel or Coffin does not *receive* a media storage device for storing a *plurality* of data media devices.

Therefore, the *prima facie* case of obviousness is further defective because the hypothetical combination of Foslien, Luffel, and Coffin does not teach or suggest each and every element of claim 60.


Reversal of the final rejection of the above claims is respectfully requested.

VIII. CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

Date: 10-26-2005



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APPENDIX OF CLAIMS

The claims on appeal are:

21. A data storage system comprising:

a data storage system housing having an opening, and first and second elongate reference rails located adjacent the opening;

a media storage device for storing a plurality of data media, the media storage device comprising a media storage device housing configured to receive the plurality of data media, the housing having a top, a bottom and opposing ends, the media storage device housing having first and second elongate alignment grooves, each of which is adapted to slidably engage with a respective one of the first and second elongate reference rails such that the media storage device may be inserted into and removed from the data storage system housing by slidably engaging the elongate reference rails and the elongate alignment grooves and guiding the media storage device through the opening of the data storage system housing along a longitudinal axis of the media storage device housing, the opposing ends of the media storage device housing being located along the longitudinal axis, the data media being inserted into and removed from the media storage device housing along an axis transverse to the longitudinal axis;

a data exchange device for reading data from the data media; and

a media handling system for transferring data media from the media storage device to the data exchange device.

22. The data storage system of claim 21, wherein the media storage device further comprises a locking plate attached to the media storage device housing and configured to engage a locking mechanism located in the opening in the data storage system housing.

24. The data storage system of claim 21, wherein the housing of the media storage device is molded from plastic.

1 25. The data storage system of claim 21, wherein the media storage device housing further
2 comprises a handle configured to enable an operator to apply a force substantially parallel to the
3 first elongate alignment groove such that when the first elongate alignment groove engages the
4 first elongate reference rail the media storage device may be inserted and removed from the data
5 storage system housing.

1 26. The data storage system of claim 21, wherein the media storage device housing has
2 opposing sides located between the top and the bottom and extending parallel to the longitudinal
3 axis, at least one of the opposing sides being configured to receive the data media.

1 27. The data storage system of claim 21, further comprising:
2 a spring mechanism comprising a first end and a second end, the first end being
3 operationally attached to the top of the media storage device housing; and
4 a finger attached to the second end of the spring mechanism;
5 wherein the spring mechanism and the finger are configured to engage the data media.

1 28. The data storage system of claim 26, wherein the media storage device housing
2 comprises a plurality of slots defined by a plurality of dividers positioned in spaced-apart relation
3 within the media storage device housing.

1 29. The data storage system of claim 27, wherein the spring mechanism comprises a metallic
2 strip.

1 35. The data storage system of claim 21, further comprising means for applying a force
2 substantially parallel to the first elongate alignment groove.

1 36. A data storage system comprising:

2 a data storage system housing having an opening, and reference rails located adjacent the
3 opening; and

4 a media storage device for storing a plurality of data media, the media storage device
5 comprising a media storage device housing configured to receive the plurality of data media, the
6 housing having opposing ends, the media storage device housing having alignment grooves, each
7 of which is adapted to slidably engage with a respective one of the reference rails such that the
8 media storage device may be inserted into and removed from the data storage system housing by
9 slidably engaging the reference rails and the alignment grooves and guiding the media storage
10 device through the opening of the data storage system housing along a longitudinal axis of the
11 media storage device housing, the opposing ends of the media storage device housing being
12 located along the longitudinal axis, the data media being inserted into and removed from the
13 media storage device housing along an axis transverse to the longitudinal axis.

1 37. The data storage system of claim 36, wherein the media storage device further comprises
2 a locking plate attached to the media storage device housing and configured to engage a locking
3 mechanism located in the opening in the data storage system housing.

1 38. The data storage system of claim 36, wherein the housing of the media storage device is
2 molded from plastic.

1 39. The data storage system of claim 36, wherein the media storage device housing has
2 opposing sides located between the top and the bottom and extending parallel to the longitudinal
3 axis, at least one of the opposing sides being configured to receive the data media.

1 40. The data storage system of claim 36, further comprising:

2 a spring mechanism comprising a first end and a second end, the first end being
3 operationally attached to the top of the media storage device housing; and

4 a finger attached to the second end of the spring mechanism;

5 wherein the spring mechanism and the finger are configured to engage the data media.

1 41. The data storage system of claim 36, wherein the media storage device housing
2 comprises a plurality of slots defined by a plurality of dividers positioned in spaced-apart relation
3 within the media storage device housing.

1 42. The data storage system of claim 40, wherein the spring mechanism comprises a metallic
2 strip.

1 54. The data storage system of claim 36, further comprising:
2 at least another media storage device for storing a plurality of data media,
3 the media storage devices stacked in a vertical stack arrangement; and
4 a bulk access apparatus to provide single access to the plurality of media storage devices
5 arranged in the vertical stack arrangement.

1 55. The data storage system of claim 36, further comprising:
2 a media exchange device for moving the media storage device;
3 a first guide structure attached to the media exchange device;
4 a second guide structure attached to the data storage system housing, the second guide
5 structure to interact with the first guide structure to move the media exchange device,
6 wherein the reference rails and alignment grooves are separate from the guide structures.

1 56. The data storage system of claim 55, wherein the media exchange device is integrated
2 with the media storage device.

1 57. The data storage system of claim 36, wherein the media storage device is for storing a
2 plurality of machine-readable devices, each machine-readable device for storing data.

1 58. The data storage system of claim 36, wherein the media storage device has a plurality of
2 slots to receive respective data media.

1 59. The data storage system of claim 36, further comprising a second media storage device
2 for storing a plurality of data media, the second media storage device having alignment grooves,
3 wherein the alignment grooves of the second media storage device are engageable by the
4 same reference rails.

1 60. A data storage system comprising:
2 a data storage system housing having an opening and reference structures;
3 a media storage device for storing a plurality of data media devices, the media storage
4 device having a housing with alignment structures to slidably engage the respective reference
5 structures to enable slidable movement of the media storage device through the opening of the
6 data storage system housing; and
7 a moveable media exchange device to receive the media storage device, the media
8 exchange device moveable between a retracted position and an extended position, wherein the
9 media storage device is positioned inside the data storage system housing when the media
10 exchange device is in the retracted position, and wherein the media storage device protrudes
11 from the data storage system housing when the media exchange device is in the extended
12 position; and
13 guide structures to moveably guide the media exchange device between the retracted and
14 extended positions.

1 61. The data storage system of claim 60, wherein the guide structures are separate from the
2 reference structures and alignment structures.

1 62. The data storage system of claim 61, wherein the media storage device has a plurality of
2 slots to receive respective data media devices.

APPENDIX OF ALLOWED CLAIMS

1 43. A data storage system comprising:

2 a data storage system housing having an opening, and reference rails located adjacent the
3 opening;

4 a media storage device for storing a plurality of data media, the media storage device
5 comprising a media storage device housing configured to receive the plurality of data media, the
6 housing having opposing ends, the media storage device housing having alignment grooves, each
7 of which is adapted to slidably engage with a respective one of the reference rails such that the
8 media storage device may be inserted into and removed from the data storage system housing by
9 slidably engaging the reference rails and the alignment grooves and guiding the media storage
10 device through the opening of the data storage system housing along a longitudinal axis of the
11 media storage device housing, the opposing ends of the media storage device housing being
12 located along the longitudinal axis, the data media being inserted into and removed from the
13 media storage device housing along an axis transverse to the longitudinal axis;

14 a drawer to receive the media storage device, the drawer being moveable between a
15 retracted position and an extended position; and

16 guide rails to enable movement of the drawer between the retracted and extended
17 positions, the guide rails being separate from the reference rails.

1 44. The data storage system of claim 43, wherein the guide rails comprise a first guide rail
2 attached to the drawer, a second guide rail attached to the data storage system housing, and a
3 third guide rail slidably engaged to the first and second guide rails.

1 45. The data storage system of claim 43, wherein engagement of the reference rails and
2 respective alignment grooves lifts the media storage device from the drawer.

1 46. The data storage system of claim 45, wherein engagement of the reference rails and
2 respective alignment grooves when the drawer is in the retracted position determines a position
3 of the media storage device in the data storage system housing instead of the drawer determining
4 the position of the media storage device.

1 47. A data storage system comprising:
2 a data storage system housing having an opening, and reference rails located adjacent the
3 opening;
4 a media storage device for storing a plurality of data media, the media storage device
5 comprising a media storage device housing configured to receive the plurality of data media, the
6 housing having opposing ends, the media storage device housing having alignment grooves, each
7 of which is adapted to slidably engage with a respective one of the reference rails such that the
8 media storage device may be inserted into and removed from the data storage system housing by
9 slidably engaging the reference rails and the alignment grooves and guiding the media storage
10 device through the opening of the data storage system housing along a longitudinal axis of the
11 media storage device housing, the opposing ends of the media storage device housing being
12 located along the longitudinal axis, the data media being inserted into and removed from the
13 media storage device housing along an axis transverse to the longitudinal axis;
14 a moveable drawer to receive the media storage device; and
15 an automated drive system adapted to, in response to user input, move the drawer
16 between a retracted position to an extended position.

1 48. The data storage system of claim 47, wherein the drive system has a motor to cause
2 movement of the drawer.

1 49. The data storage system of claim 48, wherein the drive system has a drive gear driven by
2 the motor to cause movement of the drawer.

1 50. A data storage system comprising:

2 a data storage system housing having an opening, and reference rails located adjacent the
3 opening;

4 a media storage device for storing a plurality of data media, the media storage device
5 comprising a media storage device housing configured to receive the plurality of data media, the
6 housing having opposing ends, the media storage device housing having alignment grooves, each
7 of which is adapted to slidably engage with a respective one of the reference rails such that the
8 media storage device may be inserted into and removed from the data storage system housing by
9 slidably engaging the reference rails and the alignment grooves and guiding the media storage
10 device through the opening of the data storage system housing along a longitudinal axis of the
11 media storage device housing, the opposing ends of the media storage device housing being
12 located along the longitudinal axis, the data media being inserted into and removed from the
13 media storage device housing along an axis transverse to the longitudinal axis; and

14 a moveable drawer to receive the media storage device, the drawer moveable between a
15 retracted position inside the data storage system housing and an extended position wherein the
16 drawer protrudes from the data storage system housing,

17 the drawer further comprising supplemental slots to store spare data media, the
18 supplemental slots separate from the media storage device.

1 51. The data storage system of claim 50, further comprising at least another media storage
2 device for storing a plurality of data media,

3 wherein the drawer has trays to receive respective media storage devices,

4 the supplemental slots being separate from the media storage devices.

1 52. The data storage system of claim 43, wherein the drawer and media storage device are an
2 integrated unit.

53. A data storage system comprising:

a data storage system housing having an opening, and reference rails located adjacent the opening;

a media storage device for storing a plurality of data media, the media storage device comprising a media storage device housing configured to receive the plurality of data media, the housing having opposing ends, the media storage device housing having alignment grooves, each of which is adapted to slidably engage with a respective one of the reference rails such that the media storage device may be inserted into and removed from the data storage system housing by slidably engaging the reference rails and the alignment grooves and guiding the media storage device through the opening of the data storage system housing along a longitudinal axis of the media storage device housing, the opposing ends of the media storage device housing being located along the longitudinal axis, the data media being inserted into and removed from the media storage device housing along an axis transverse to the longitudinal axis;

at least another media storage device for storing a plurality of data media,
the media storage devices stacked in a vertical stack arrangement; and

a plurality of moveable drawers to receive respective media storage devices, each drawer moveable between a retracted position inside the data storage system housing and an extended position wherein the drawer protrudes from the data storage system housing.

EVIDENCE APPENDIX

1. Webopedia, Definition for “DASD” (entered based on submission of the reference by Applicant with Reply to Office Action Mailed August 11, 2004).

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